(b) $n = 100$ gives $u_{100} = 8 \times 100 - 3$

$= 797$

So the 100th term of the sequence is 797.

(c) $n = 200$ gives $u_{200} = 8 \times 200 - 3$

$= 1597$

So the 200th term of the sequence is 1597.

Exercises

1. Write down the next 3 terms of each of the following sequences:
   (a) 2, 5, 8, 11, 14, ...
   (b) 9, 18, 27, 36, 45, ...
   (c) 13, 14, 15, 16, 17, ...
   (d) 7, 15, 23, 31, 39, ...

2. Write down the next 3 terms of each of the following sequences:
   (a) 100, 98, 96, 94, 92, ...
   b) 20, 17, 14, 11, 8, ...
   (c) 48, 43, 38, 33, 28, ...
   (d) 17, 13, 9, 5, 1, ...

3. A sequence is defined by the formula $u_n = 6n - 2$.
   (a) Calculate the first 5 terms of the sequence.
   (b) What is the difference between the terms of the sequence?

4. A sequence is defined by the formula $u_n = 8n + 2$.
   (a) Calculate the first 5 terms of the sequence.
   (b) What is the difference between the terms of the sequence?
   (c) Write down the next 3 terms of the sequence.

5. A sequence is given by $u_n = 7n - 3$.
   (a) Calculate the first 4 terms of the sequence.
   (b) What is the difference between the terms of the sequence?
   (c) Explain where the difference appears in the formula for the terms.

6. A sequence is given by $u_n = 9n + 2$.

   (a) Calculate the first 4 terms of the sequence.

   (b) How does the difference between terms relate to the formula?

7. A sequence is given by the formula $u_n = 11n - 7$.

   (a) What would you expect to be the difference between the terms of the sequence?

   (b) Calculate the first 4 terms of the sequence and check your answer to part (a).

   (c) Calculate the 10th term of the sequence.

8. A sequence is defined by the formula $u_n = 82 - 4n$.

   (a) Calculate the first 5 terms of the sequence.

   (b) What is the difference between terms for the sequence?

   (c) How does this difference relate to the formula?

   (d) Calculate the 20th term of the sequence.

9. (a) Calculate the 100th term of the sequence given by $u_n = 8n - 5$.

   (b) Calculate the 25th term of the sequence given by $u_n = 11n - 3$.

   (c) Calculate the 200th term of the sequence given by $u_n = 3n + 22$.

   (d) Calculate the 58th term of the sequence defined by $u_n = 1000 - 5n$.

10. Four sequences, A, B, C and D, are defined by the following formulae:

    A $u_n = 8n + 2$

    B $u_n = 7n - 3$

    C $u_n = 3n + 1$

    D $u_n = 100 - 6n$

    (a) Which sequences have 4 as their first term?

    (b) Which sequence is *decreasing*?

    (c) Which sequence has a difference of 7 between terms?

    (d) Which sequence has 301 as its 100th term?